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Mr. Gregory J. Thorpe, Ph.D.
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Dear Dr. Thorpe:

The Department of the Interior (DOI) has received the Draft Environmental Impact Statement (DEIS) prepared for the Second Supplement to the 2005 Draft Environmental Impact Statement (SDEIS) and Draft Section 4(f) for **NC-12 Replacement of Herbert C. Bonner Bridge (No. 11) over Oregon Inlet, Dare County, North Carolina.**

Introduction

In a letter dated February 13, 2006 (ER 05/881), the DOI provided comments on the SDEIS and Draft Section 4(f) Evaluation for NC 12 Replacement of Herbert C. Bonner Bridge. The SDEIS identified two replacement bridge corridors, the Pamlico Sound Bridge Corridor and the Parallel Bridge Corridor with NC 12 Maintenance. There were two alternatives and three alternatives, respectively, selected for detailed study for the two corridors. The range of alternatives within the two corridors was:

- Pamlico Sound Bridge Corridor
 - With Curved Rodanthe Terminus
 - With Intersection Rodanthe Terminus
- Parallel Bridge Corridor
 - With Nourishment
 - With Road North/Bridge South
 - With All Bridge

Subsequently, the North Carolina Department of Transportation (NCDOT) has added two additional alternatives under the Parallel Bridge Corridor for detailed study, which are the subject of the Second Supplement to the 2005 SDEIS and Draft Section 4(f) Evaluation. These two new alternatives are in bold:

- **Parallel Bridge Corridor**
 - With Nourishment
 - With Road North/Bridge South
 - With All Bridge
 - **With Phased Approach/Rodanthe Bridge**
 - **With Phased Approach/Rodanthe Nourishment**

The DOI's February 13, 2006, comments are still valid for the original alternatives, and are generally valid for the two new alternatives. With regard to effects on fish and wildlife resources, including threatened and endangered species, our February 13, 2006, comments apply to the new Phased Approach Alternatives. Except where noted, the following additional comments apply only to the two new Phased Approach Alternatives.

New Alternatives

The Phased Approach Alternatives would involve constructing a new Oregon Inlet Bridge near the existing bridge and elevating most of NC 12 through the Pea Island National Wildlife Refuge (Refuge) and northern Rodanthe on new bridges, within the existing NC 12 easement. These alternatives would be built in four phases, with the first phase being the bridge across Oregon Inlet. Additional phases would be built as necessitated by shoreline erosion. Two southern termini alternatives are under consideration. In the Phased Approach/Rodanthe Bridge Alternative, the bridge would begin in Rodanthe just north of Sudie Payne Road and extend north to Oregon Inlet, except for a 2.1-mile section of NC 12 in the southern half of the Refuge. In the Phased Approach/Rodanthe Nourishment Alternative, the southern end of the NC 12 bridge would begin 0.3-mile south of the Refuge/Rodanthe border, and beach nourishment would be used to protect NC 12 in Rodanthe. The Phased Approach/Rodanthe Nourishment Alternative would require placing beach fill on 1,500 feet of beach within the Refuge, outside of the existing easement. The Second SDEIS states that components of any of the five Parallel Bridge Corridor alternatives could be "mixed and matched" along the length of NC 12 to create other variations (Page vi).

General Comments

There are several references to projects being analyzed by the Outer Banks Task Force (OBTF) throughout the SDEIS. Because of the emphasis placed on the OBTF, the SDEIS should describe the OBTF and explain the role of that organization in the overall planning process. The goals outlined in the OBTF Memorandum of Understanding (MOU) should be presented, and each alternative, including mix and match options, should be placed into the context of level of contribution towards achieving those goals. It is acknowledged that the MOU was last renewed in 1999 and expired in 2004, but the fact that it established guiding principles for the OBTF should be clearly stated.

There are several references to the Constructability Workshop held on August 29-31, 2006, with regards to the Phased Approach alternatives throughout the SDEIS. The purpose of the workshop was to assess the feasibility of constructing the various bridges, roads and other structures within the existing right-of-way. We note that while the workshop addressed the feasibility of constructing the Phased Approach bridges, it is unclear whether or not it addressed the practicability of such construction. It is clear from the long history of maintenance activities on NC 12 that even relatively simple maintenance of the existing highway cannot be done within the existing right-of-way, much less construction of bridges, temporary roads, shoulders and ditches within that same right-of-way width. We recommend that the feasibility of constructing the various bridges, roads and other structures within the existing right-of-way, as well as maintenance of the highway, be discussed in greater detail.

Specific Comments

Page xix states "The potential also exists for a deep breach near the terminal groin, resulting in part from soundside erosion. It would likely need to be closed with a bridge, such as included in the two Phased Approach alternatives and the All Bridge Alternative." We note that either of the Pamlico Sound alternatives would avoid this problem altogether. Therefore, we recommend that the text be modified to reflect this point.

Page xxiii states "The Phased Approach alternatives would necessitate the implementation of short-term NC 12 maintenance actions in the Canal Zone ...and Rodanthe 'S' Curve ...hot spots (with associated impacts) that are being planned in the context of studies by the Outer Banks Task Force." The Department is very concerned that these short-term, interim measures to stabilize NC 12 could be used as justification to return to the status quo of repeatedly reacting to storm damage to NC 12 once Phase I is completed. Since the Phased Approach alternatives would be built in four phases over several years, we are concerned that after the Oregon Inlet Bridge is constructed (Phase I), the decision could be made to not proceed with Phases II, III and IV. The following statements on page 2-4 appear to be a tacit admission of such: "Although the Phased Approach alternatives are described and addressed in this Supplement as a phased alternative with specific locations and lengths for the phases...these details could be adjusted based on funding availability and the changing conditions within the project area... implementation of any individual phase could be accelerated or delayed." Due to the high costs of this project, the Department is concerned that the Phased Approach could be used to only build the Oregon Inlet Bridge and then return to the status quo of repairing NC 12 after storms and artificially maintaining the protective dune system in the Pea Island National Wildlife Refuge. This would continue to prevent natural barrier island processes from occurring, and thus adversely affect the Refuge and the fish and wildlife resources that utilize the Refuge throughout the 28-year construction timeframe.

We recommend that clarifying text be added to sections 7 and 9 on pages xxiv and xxv. The terms and conditions of the right-of-way easement specify, to a certain extent, what

can and cannot be done within that right-of-way. The current easement for NC 12 grants authority to NCDOT for the specific purpose of constructing, operating and maintaining a public road through the Refuge and facilities, including parking for a ferry landing to be used in conjunction with the public road. The existing easement does not grant NCDOT the authority to any uses not described above. Consequently, replacing a road with a bridge may not be considered a minor modification to the right-of-way, even though all work may be entirely within the existing easement boundaries, and a determination must be conducted before a decision is made. If it is determined that the modification is not minor, an amendment to the easement will be required and that process will invoke Compatibility Determination requirements under the National Wildlife Refuge System Improvement Act of 1997 and its implementing regulations (50 CFR 26.41). In the Phased Approach alternatives, where it addresses construction, operation, and maintenance of NC 12 within the Refuge, we believe the proposed uses may not receive a favorable compatibility determination. We note that these concerns do not exist with the Pamlico Sound Corridor alternatives. Therefore, we recommend that the text be modified to reflect this requirement and potential outcome.

It is stated throughout the SDEIS that the Phased Approach alternatives would be confined to the existing NC 12 easement within the Refuge. However, page 2-10 states "...by the time a Phased Approach Alternative is designed and built, it is possible that NC 12 will be in an easement different from where it is today." These are seemingly contradictory statements. Furthermore, page 2-10 states "Since the future location of such a relocation is unknown, this design and assessment of the Phased Approach alternatives assumes its bridges are built within the existing easement and that the impacts would be similar in either case." There seems to be a presumption that other NEPA documents prepared for maintenance activities and hot spot "solutions" will satisfactorily address concerns and impacts. If the intent is to relocate the existing NC 12 right-of-way on an "as needed" basis, then additional direct, indirect and cumulative analysis of the impacts is necessary.

The discussion in section 2.3.1.4 on page 2-20 regarding potential cost sharing for beach nourishment assumes that dredged sand is biologically suitable (e.g. for sea turtle nesting). This may not be a scientifically supported assumption. Sand that is not comparable to native beach sand with regards to physical and chemical properties, including grain size and color, cannot be placed on the Refuge beach. Allowing sand on the beach that is not suitable would be disruptive to the ecological processes in the beach face ecosystem, would degrade nesting habitat for sea turtles, and negatively impact beach invertebrates serving as a prey base for numerous migratory bird species. This is a critical point and we believe that it should be discussed in detail.

The discussion in section 2.3.1.4 on page 2-20 seems to assume that the Corps of Engineers has, and will continue to have, funding for pipeline dredging on an annual basis. This has not been the case in the past. Also, the sand from certain areas of the Oregon Inlet navigation channel may not be suitable for placement on the Refuge beach. This is due to difference in hydraulic sorting that occurs in different segments of the inlet. The DOI's Fish and Wildlife Service has 12 years of trend analysis data which

demonstrate impacts to invertebrates in the beach face. The invertebrate population declines after large sand disposal projects. Time, quantity, and spacing patterns of sand placement will affect the level of impacts to the invertebrates. Any sand placement on Refuge land should be fully coordinated with the DOI to avoid adverse impacts to our trust resources. We also recommend text be added that acknowledges Corps of Engineers' funding uncertainties and sand suitability analysis that needs to occur.

The first paragraph on page 4-4 suggests that there is some confusion over the Pea Island National Wildlife Refuge Comprehensive Conservation Plan (CCP) and a Compatibility Determination. These two documents do not have the same purpose. The CCP provides guidance for Refuge management over the next 15 years to aid the Refuge in accomplishing the mission of the National Wildlife Refuge System and for achieving the purpose for which the Refuge was established. When conducting a Compatibility Determination for a proposed use, the CCP is used as a reference document and for guidance to determine whether that use will materially interfere with or detract from the mission and purpose directives. Text should be added to make this difference clear to the reader.

Page 4-10 states "Like the All Bridge Alternative, the bridge would present a stark contrast with the natural character of the Refuge...It would not be characteristic of the undeveloped and protected character of the Refuge that makes it rare along the eastern US seaboard in terms of views and a setting for recreation activities." We strongly agree that such a massive, elevated bridge running through almost 10 miles of the Refuge would adversely affect the character of the Refuge. We note that these concerns are not as pronounced with the Pamlico Sound Corridor alternatives. The text within this section should be modified to reflect this point.

Section 4.6.3 on pages 4-21 through 4-26 does not fully address the issue of scour around bridge piles. The discussion does not follow through with any meaningful analysis of the ecological impacts of scour. With bridges over land which is gradually transitioning to the ocean environment, the Phased Approach bridge impacts will occur on a continuum along and across the beach through time. Impact analysis should not focus on one or two species, but should include impacts to habitat quantity and quality for listed species as well as migratory birds and other wildlife over time. To fully disclose the impacts, additional analysis should be conducted for maintenance and/or repair of bridge piles, to include the potential placement of revetment or other stabilizing structures adjacent to the piles, and their effects on fish and wildlife resources inside and outside the existing easement, as well as those piles currently on land, currently under water, and those that may be under water in the future.

Section 4.7.5 on page 4-34 states "The two Phased Approach alternatives would have no direct impact on Refuge lands since they would be within the existing NC 12 easement." We disagree with this statement. The Phased Approach/Rodanthe Nourishment alternative would directly affect 1,500 feet of Refuge beach outside the existing NC 12 easement. Construction noise and the presence of construction

equipment will directly affect wildlife on Refuge lands immediately outside the existing easement. Section 4.7.5 also does not discuss impacts associated with potential road relocations and other maintenance activities during the time leading up to each successive phase of construction. The existing text should be modified to acknowledge these effects.

From the information on pages 4-35 and 4-36, it can be determined that all four phases would require at least 13 years of actual construction during a 28-year timeframe. This amounts to a near-perpetual construction zone within the Refuge for 28 years. Section 4.7.6.5 does not adequately address the effects of this construction disturbance to shorebirds, waterfowl and other migratory birds. Also, the section does not adequately address the permanent effects to birds and other species of having a bridge on or near the beach. At some point, as the beach erodes, the bridge will be directly over the beach. Later, the bridge will be in the ocean immediately off-shore from the beach. The SDEIS does not address what the specific effects to the birds would be. We are especially concerned with the effects to the federally threatened piping plover (*Charadrius melodus*). Text should be added to address this issue.

Page 4-37 states "However, shoreline erosion could create Piping Plover habitat under the bridges as the shoreline erodes." This is a questionable statement since it is uncertain that piping plovers would utilize otherwise suitable habitat under a bridge. The text should be modified to reflect this point.

The discussion on green sea turtles (*Chelonia mydas*) on page 4-38 mentions nighttime lighting, but does not describe the effects. The discussion on loggerhead sea turtles (*Caretta caretta*) on pages 4-38 and 4-39 does not mention nighttime lighting or its effects. We recommend appropriate text be added to analyze the effects of nighttime lighting to these two species.

In the discussion on seabeach amaranth (*Amaranthus pumilus*), page 4-40 states "If the species would be affected, the location containing the species would not be used for dredged material disposal." It is unclear how NCDOT could leave a gap in its beach nourishment without compromising the structural integrity of the rest of the beach fill. Clarifying text should be added to address this point.

The last sentence on page 4-40 implies that displaced wildlife can move to adjacent habitat with little impact. Movement and assimilation into surrounding habitat depends upon many factors such as species impacted, population density within the impacted area as well as adjacent habitat, and the quantity and quality (or suitability) of the adjacent habitat. It is inappropriate and misleading to discount impacts to wildlife by implying the affected species can simply move to adjacent habitat. The project area consists of a very narrow strand of barrier island and habitat availability is very limited, making it unlikely that wildlife displaced by project-related impacts would be able to easily locate suitable alternative habitat. The text should be modified to address this point.

The discussion in section 4.12.2 on page 4-52 suggests that only the National Park Service and U.S. Fish and Wildlife Service consider ocean overwash desirable, but falls short of presenting an analysis regarding the necessity of ocean overwash for maintaining the barrier island system. Many coastal geologists, coastal engineers and scientists from other disciplines recognize overwash as a renewal process that is critical to maintaining the barrier island system (e.g., Pilkey *et al.* 1998, pp. 41-48). We believe the text should be modified to address the importance of overwash to coastal ecosystems.

Page 4-53 states "The NCDOT would seek a new permit from the Refuge to protect the new bridge." We continue to emphasize that selecting any Parallel Bridge Corridor alternative, including the Phased Approach Alternatives would not guarantee that a new permit to retain the terminal groin will be issued. The text should be modified to reflect this point.

Section 4(f) Evaluation

Section 5.0 beginning on page 5-1 paraphrases the SDEIS but adds little information and analysis with regards to how the Phased Approach affects Section 4(f) resources. We believe the evaluation discounts impacts to these resources by implying that the phased work will occur within the existing right-of-way, without full consideration of the direct, indirect and cumulative effects of various mix and match options of implementing the Phased Approach over time. The net effect of the analysis is that it fails to recognize that the Phased Approach is a "status quo" approach to replacing the Bonner Bridge and maintaining NC 12 through the Refuge for as long as there is a sufficient land base for relocating the road. It appears that for 13 years out of 28, the Refuge would be in a near perpetual construction zone. The concern is that the Refuge's purpose of providing habitat for migratory birds and other wildlife could be adversely affected. Over time, the net result is a barrier island national wildlife refuge with severely degraded habitat quantity and quality for migratory birds, listed species and other wildlife. We note that these concerns do not exist with the Pamlico Sound Corridor alternatives. The text within this section should be modified to reflect this point.

Construction staging area will need to be identified for equipment, materials storage and a construction camp. Cape Hatteras National Seashore is willing to cooperate with NCDOT on this issue provided that the staging sites are evaluated for potential impacts as part of the NEPA planning and compliance process. Contact Michael Murray, Superintendent, Outer Banks Group at 252-473-2111, ext. 148.

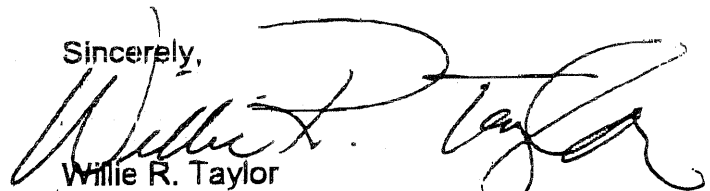
The DOI request that access is not disrupted, to the extent possible, to Oregon Inlet Fishing Center (a National Park Service Concession), the U.S. Coast Guard Station Oregon Inlet, Bodie Island Campground and Ramp 4 off-road vehicle access for Bodie Island Spit.

Summary

The DOI thanks you for allowing us to review this DSEIS. Based on our review, we have determined the DSEIS is inadequate and does not meet the intended purpose of the Council on Environmental Quality's (CEQ) Implementing Regulations. The formulation of National Environmental Policy Act (NEPA) compliance documentation is guided by Implementing Regulations (40 CFR 1500-1508) and additional guidance developed by CEQ (46 Fed. Reg. 18026), other environmental legislation, agency specific NEPA compliance and planning guidance, and input from other agencies and the public. The DOI is concerned the NCDOT did not adequately follow these various mandates, nor address comments and planning concerns from the DOI and the public, in formulating the proposed plan and its associated compliance documentation.

Based on our findings and concerns, and depending on NCDOT's decision to proceed with either this proposal or any similar plan selected for inclusion in the final document, we may refer this project to CEQ under Section 1504 of the Council's Regulations for Implementing the Procedural Provisions of NEPA. The DOI wishes to further coordinate with the NCDOT at the earliest possible time in order to reach a solution to our issues and concerns that could preclude the necessity for referral. Coordination can be initiated by contacting Mike Bryant, Refuge Manager, Pea Island National Wildlife Refuge, at (252) 473-1131, extension 222, or Pete Benjamin, Project Leader, Raleigh Ecological Services Field Office, at (919) 856-4520, extension 11.

Sincerely,



Willie R. Taylor

Director, Office of Environmental
Policy and Compliance

Literature Cited

Pilkey, O.H., W.J. Neal, S.R. Riggs, C.A. Webb, D.M. Bush, D.F. Pilkey, J. Bullock, and B.A. Cowan. 1998. The North Carolina Shore and Its Barrier Islands – Restless Ribbons of Sand. Duke University Press. Durham, North Carolina. 318 pp.

bcc:

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